

WE CLAIM:

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5 1. A method of assembly a frame structure of a SDH signal at a hierarchy level N, comprising:
 receiving a hierarchically multiplexed administrative unit AU-n comprising a payload and an AU-n pointer;
 converting said AU-n to a tributary unit TU-n; and
 hierarchically multiplexing said TU-n into said frame structure, where $n \geq 3$, and gives the granularity of said SDH signal, and said AU-n pointer provides the beginning of said payload with respect to said frame.

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2. A method as claimed in claim 1, wherein said step of converting comprises:
 translating said AU-n payload into a TU-n payload; and
 15 transforming said AU-n pointer into a TU-n pointer and aligning said AU-n payload into said TU-n based on said TU-n pointer.

3. A method as claimed in claim 1, wherein said step of hierarchically multiplexing comprises:
 20 mapping said TU-n into a tributary unit group TUG-n;
 hierarchically multiplexing said TUG-n into a higher order TUG-k;
 mapping said TUG-k into a higher order virtual container VC-k of same hierarchical level;
 aligning said higher order virtual container into a AU-k by providing
 25 a AU -k pointer;
 mapping said AU-k into a administrative unit group AUG-k; and
 assembling said frame structure from said AUG-k,
 where $k \geq n$.

30 4. A method as claimed in claim 2, wherein said step of translating comprises:

mapping the user information from said AU-n payload field into said TU-n payload field; and

providing fixed stuff bits whenever the size of said TU-n payload field is larger than the area occupied by said user information.

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5. A method as claimed in claim 3, wherein said step of hierarchically multiplexing said TUG-n into a TUG-k comprises:

(a) mapping said TU-n into a TUG-n;

(b) multiplexing said TUG-n into a VC-k;

10 (c) mapping said VC-k into a TU-k by adding a POH field corresponding to a hierarchical level k;

(d) mapping said TU-k into a TUG-k; and

(e) repeating steps (a) to (e) to the hierarchy level N.

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6. A method as claimed in claim 2, wherein $n=3$ and $N=4$ for obtaining a hierarchically multiplexed STM-4.

7. A method as claimed in claim 6, wherein said step of hierarchically multiplexing comprises:

20 mapping said TU-3 into a tributary unit group TUG-3;

hierarchically multiplexing said TUG-3 into a TUG-5;

mapping said TUG-5 into a higher order virtual container VC-5 of same hierarchical level;

25 aligning said higher order virtual container into a AU-5 by providing a AU-5 pointer;

mapping said AU-5 into a administrative unit group AUG-N; and

assembling said frame structure from said AUG-4 group.

30 8. A method as claimed in claim 2, wherein $n=4$ and $N=4$ for obtaining a hierarchically multiplexed STM-4.

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~~hierarchically multiplexing~~ said TUG-4 into a TUG-5;

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mapping said ~~AU-5~~ into a administrative unit group AUG-N; and

assembling said frame structure from said AUG-4 group.

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converting said AU-n-mc to a tributary unit TU-n-mc; and

hierarchically multiplexing said TU-n-mc into said frame structure, where $n \geq 3$, and gives the granularity of said payload, m is the level of concatenation and said AU-n pointer provides the beginning of said payload with respect to said frame.

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translating said AU-n payload to a TU-n payload; and

hierarchically multiplexing said TU-n into said frame structure.

12. A hierarchically multiplexed signal for transport over a multiplex section of a synchronous network, comprising

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13. A signal as claimed in claim 12, wherein said higher order tributary has a minimum size corresponding to an STM-4.

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